

## Abstract

A process for removing trioxane from a mixture I of formaldehyde, trioxane and water,  
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- a) distilling the mixture I in a first distillation stage at a pressure of from 0.1 to 2 bar to obtain a stream II which comprises formaldehyde and a stream III which comprises predominantly trioxane and additionally water and formaldehyde,  
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- b) mixing the stream III with a recycle stream VII which comprises predominantly trioxane and additionally water and formaldehyde to obtain a stream IIIa which comprises predominantly trioxane and additionally water and formaldehyde,
- 15 c) distilling the stream IIIa, if appropriate after removing low boilers from the stream III or IIIa in a further distillation stage, in a second distillation stage at a pressure of from 0.2 to 10 bar, the pressure in the second distillation stage being at least 0.1 bar higher than the pressure in the first distillation stage, to obtain a stream IV of trioxane and a stream V which comprises predominantly trioxane and  
20 additionally water and formaldehyde,
- d) distilling the stream V in a third distillation stage at a pressure of from 0.1 to 4 bar to obtain a stream VI which comprises predominantly water and additionally formaldehyde, and the recycle stream VII which comprises predominantly  
25 trioxane and additionally water and formaldehyde,
- e) if appropriate, distilling the stream VI in a fourth distillation stage to obtain a stream VIII which comprises predominantly water, and a stream IX which comprises predominantly formaldehyde.  
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(Figure)